

# Claims

- [c1] 1.A light source comprising:  
a prism having a plurality of optical planes for redirecting light; and  
a plurality of beam generators for generating light beams and projecting the light beams to the optical planes;  
wherein the optical planes redirect the light beams to collect the light beams to form an enhanced light beam.
- [c2] 2.The light source of claim 1 wherein the optical planes reflect the light beams to form the enhanced light beam.
- [c3] 3.The light source of claim 2 wherein total reflection of the light beams occurs at the optical planes, the light beams being collected to form the enhanced light beam after the total reflections.
- [c4] 4.The light source of claim 3 wherein the light beams enter the prism with a first refraction, and then leave the prism with a second refraction after the total reflection in the prism.
- [c5] 5.The light source of claim 3 wherein each of the beam generators corresponds to one of the optical planes, and

each of the light beams is totally reflected at the corresponding optical plane.

[c6] 6.The light source of claim 5 comprising two of the beam generators and the prism comprising three of the optical planes: a first optical plane, a second optical plane, and a third optical plane; wherein the light beams generated by the two beam generators are respectively totally reflected at the first optical plane and the second optical plane, and then leave the prism through the third optical plane.

[c7] 7.The light source of claim 5 comprising three of the beam generators and the prism comprising four of the optical planes: a first optical plane, a second optical plane, a third optical plane, and a fourth optical plane; wherein the light beams generated by the three beam generators are respectively totally reflected at the first optical plane, the second optical plane, and the third optical plane, and then leave the prism through the fourth optical plane.

[c8] 8.The light source of claim 5 comprising four of the beam generators and the prism comprising five of the optical planes: a first optical plane, a second optical plane, a third optical plane, a fourth optical plane, and a fifth optical plane; wherein the light beams generated by

the four beam generators are respectively totally reflected at the first optical plane, the second optical plane, the third optical plane, and the fourth optical plane, and then leave the prism through the fifth optical plane.

[c9] 9.The light source of claim 2 wherein the prism is placed in a rotatable manner and further comprises:

a plurality of first reflective filtering areas for filtering and reflecting light, where the light beams are filtered and reflected by the first reflective filtering areas when the prism rotates to a first angle;

a plurality of second reflective filtering areas for filtering and reflecting light, where the light beams are filtered and reflected by the second reflective filtering areas when the prism rotates to a second angle; and

a plurality of third reflective filtering areas for filtering and reflecting light, where the light beams are filtered and reflected by the third reflective filtering areas when the prism rotates to a third angle.

[c10] 10.The light source of claim 2 wherein each of the beam generators corresponds to one of the optical planes, and each of the light beams is reflected at the corresponding optical plane.

[c11] 11.The light source of claim 10 comprising three of the

beam generators and the prism comprising three of the optical planes, wherein the light beams generated by the three beam generators are reflected at the corresponding optical planes and then collected to form the enhanced light beam.

[c12] 12.The light source of claim 10 comprising four of the beam generators and the prism comprising four of the optical planes, wherein the light beams generated by the four beam generators are reflected at the corresponding optical planes and then collected to form the enhanced light beam.

[c13] 13.The light source of claim 1 being installed in a projector and being used to provide light to the projector, wherein the projector comprises:  
a light pipe for uniformizing light received from the light source; and  
an image device for processing the uniformized light from the light pipe and for projecting the processed light to form an image, wherein the light pipe is positioned between the prism and the image device.

[c14] 14.The light source of claim 13 wherein the projector further comprises a color wheel located between the prism and the light pipe for filtering the enhanced light beam so as to output beams with different colors by

turning.

[c15] 15. The light source of claim 1 wherein each of the beam generators comprises:

a light device for radiating light; and

a light collector for collecting the light radiated from the light device to form the light beam.

[c16] 16.A projector comprising:

a light source having a prism and a plurality of beam generators, wherein the prism having a plurality of optical planes, the plurality of beam generators being used for generating light beams and projecting the light beams to the optical planes, the optical planes redirecting the light beams to collect the light beams to form an enhanced light beam;

a light pipe for uniformizing the enhanced light beam received from the light source; and

an image device for processing the uniformized light from the light pipe and for projecting the processed light to form an image;

wherein the light pipe is positioned between the prism and the image device.

[c17] 17.The projector of claim 16 further comprising a color wheel located between the prism and the light pipe for filtering the enhanced light beam so as to output beams

with different colors by turning.

[c18] 18. The projector of claim 16 wherein the optical planes reflect the light beams to form the enhanced light beam.

[c19] 19. The projector of claim 18 wherein total reflection of the light beams occurs at the optical planes, the light beams being collected to form the enhanced light beam after the total reflections.

[c20] 20. The projector of claim 18 wherein the prism is placed in a rotatable manner and further comprises:  
a plurality of first reflective filtering areas for filtering and reflecting light, where the light beams are filtered and reflected by the first reflective filtering areas when the prism rotates to a first angle;  
a plurality of second reflective filtering areas for filtering and reflecting light, where the light beams are filtered and reflected by the second reflective filtering areas when the prism rotates to a second angle; and  
a plurality of third reflective filtering areas for filtering and reflecting light, where the light beams are filtered and reflected by the third reflective filtering areas when the prism rotates to a third angle.